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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,057	07/25/2003	Yong Guen Lee	20059/PIA30746	2208
34431	7590	06/30/2005	EXAMINER	
HANLEY, FLIGHT & ZIMMERMAN, LLC 20 N. WACKER DRIVE SUITE 4220 CHICAGO, IL 60606			GUERRERO, MARIA F	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/627,057	<b>Applicant(s)</b> LEE, YONG GUEN	
	<b>Examiner</b> Maria Guerrero	<b>Art Unit</b> 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This Office Action is in response to the Election filed March 24, 2005 and the Amendments filed November 15, 2004 and April 11, 2005.

**Status of Claims**

2. Claims 11-14 are canceled. Claims 1-10 are pending.

***Election/Restrictions***

3. Applicant's election without traverse of Group 1(claims 1-10) in the reply filed on March 24, 2005 is acknowledged.

***Priority***

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Objections***

5. Claim 1 is objected to because of the following informalities: Claim 1 recites "forming **at least one** contact hole in the insulating layer within the active region without forming a contact hole within the element isolation region". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 7-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Yeh et al. (U.S. 6,294,834).

Yeh et al. teaches a method for fabricating an RF semiconductor device (Abstract, col. 4, lines 42-46, 64). Yeh et al. shows forming a trench to define an active region and an element isolation region in a semiconductor substrate (col. 3, lines 18-35). Yeh et al. discloses forming a plurality of gate lines within the active region not extending over a center of the trench (Fig. 1). Yeh et al. teaches forming an insulating layer on the plurality of gate lines and the semiconductor substrate (col. 3, lines 46-50). Yeh et al. shows forming a contact hole and a contact plug in the insulating layer (col. 3, lines 46-60). Yeh et al. discloses forming a conductive pattern layer electrically connected with the contact plug (Fig. 1). Yeh et al. teaches minimizing parasitic capacitance and resistance (Abstract, col. 1, lines 55-60, col. 2, lines 40-56).

7. Claims 1-4, 9, and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ma et al. (U.S. 5,939,753).

Ma et al. teaches a method for fabricating an RF semiconductor device (col. 1, lines 5-13, col. 11, lines 43-45). Ma et al. shows forming a trench to define an active region and an element isolation region in a semiconductor substrate (col. 3, lines 65-67, col. 4, lines 1-11). Ma et al. discloses forming a plurality of gate lines within the active region not extending over the center of the isolating region (a center of the trench is inherent because the isolation region are formed by trenching) (Fig. 7, col. 4, lines 1-11). In addition, Ma et al. teaches forming an insulating layer (oxide, 7000-9000 angstroms) on the plurality of gate lines and the semiconductor substrate (Fig. 8, col. 8, lines 8-13, col. 9, lines 43-45). Ma et al. shows forming a contact hole and a contact plug in the insulating layer (Fig. 8). Ma et al. discloses forming a conductive pattern layer electrically connected with the contact plug (Fig. 8-9, col. 8, lines 30-36, col. 9, lines 9-64). Ma et al. teaches two gate lines being connected in the active region but not in the element isolation region (Fig. 8).

Furthermore, Ma et al. shows the RF semiconductor device comprising: a substrate having an active region and an isolation region; and a plurality of gates lines formed in the active region but not in the isolation region of the substrate (a center of the trench is inherent because the isolation region are formed by trenching) (Fig. 8, col. 4, lines 5-11).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (U.S. 5,939,753) in view of Hsu et al. (U.S. 6,44,517).
9. Regarding claims 5-6, Ma et al. does not specifically show the insulating layer being an oxide or a polyimide and the conductive pattern having the thickness as claimed. However, Hsu et al. shows the insulating layer being a low temperature oxide or a polyimide (col. 8, lines 15-25). Hsu et al. shows the conductive pattern having a thickness above 10,000 angstroms (col. 11, lines 45-60).
10. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ma et al. by including the insulating layer and the thickness of the conductive pattern as taught by Hsu et al. in order to further increase the quality factor which is one objective in the two references (Ma et al., col. 9, lines 39-63; Hsu et al., col. 5, lines 57-65, col. 6, lines 1-10).

***Response to Arguments***

11. Applicant's arguments filed November 15, 2004 have been fully considered but they are not persuasive. Claims 1-10 stand rejected because the amendment does not overcome the rejections.

Applicant argued that Yeh does not disclose forming a contact hole in the insulating layer within the active region not within the element isolation region. However, Yeh, in a broad interpretation, meets the claimed language because Yeh shows forming **a least one** contact hole and a contact plug in the insulating layer and not in within the element isolation region (Fig. 1, col. 3, lines 46-60).

Applicant argued that Ma does not disclose forming a contact hole in the insulating layer within the active region not within the element isolation region. However, Ma, in a broad interpretation, meets the claimed language because Ma shows forming **at least one** contact hole and a contact plug in the insulating layer and not in within the element isolation region (Fig. 8).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., forming a contact hole and a contact plug in the insulating layer only within the active region) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 1 recites "forming **at least one** contact hole in the insulating layer within the active region".

In addition, the transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003)

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("The transition comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); < Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); In re Baxter, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981).

Furthermore, during patent examination, the pending claims must be "given \*>their< broadest reasonable interpretation consistent with the specification." > In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. > In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)(The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.) < This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) >; Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1372, 69 USPQ2d 1857 (Fed. Cir. 2004). There is not evidence of any special definition to the terms



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recited on the claims; therefore, the claims have been interpreted according to plain meaning and giving the broadest reasonable interpretation.

***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 24, 2005

*Maria Guerrero*  
**MARIA F. GUERRERO**  
**PRIMARY EXAMINER**